

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims: Please amend the claims as follows:

We claim:

Claim 1. (Currently Amended) A method for the detection, characterization and qualitative and/or quantitative determination of the activity of a phosphoamidase PHP1 enzyme, comprising hydrolyzing a phospho-ester bond (P-O) of at least one of the substrates which is FDP (fluorescein diphosphate), DDAO (9H-(1,3-dichloro-9,9-dimethyl-acridin-2-one-7-yl)phosphate), DiFMUP (6,8-difluoro-4-methyl-belliferyl phosphate), ELF[®]39 phosphate (2-(2'-phosphophenyl)-4-(3H)-quinazolinone) ~~and~~ or ELF[®]97 phosphate (2-(5'-chloro-2'-phosphophenyl)-6-chloro-4-(3H)-quinazolinone) and correlating the resultant hydrolysis level with the phosphoamidase activity of said enzyme.

Claim 2. (Cancelled)

Claim 3. (Cancelled)

Claim 4. (Cancelled)

Claim 5. (Currently Amended) A method for the identification of an inhibitor or activator of a phosphoamidase or protein phosphoamidase PHP1 enzyme comprising:

- a) establishing a sample comprising ~~a~~ the phosphoamidase or protein phosphoamidase PHP1 enzyme and a test substance,
- b) administering a substrate ~~selected from the group consisting of which is~~ FDP, DDAO, DiFMUP, ELF[®]39 phosphate ~~and~~ or ELF[®]97 phosphate to the sample,
- c) detecting the signal produced by the hydrolysis of the phospho-ester bond (P-O) of the substrate, and
- d) identifying the test substance as an activator or inhibitor of the phosphoamidase by comparing the signal produced in the sample comprising the test substance with the signal produced in a control sample comprising no test substance.

Claim 6. (Withdrawn) A method for the identification of the activity of a phosphoamidase in an electrophoresis gel or on a blot membrane comprising the steps:

- a) separating a sample comprising a phosphoamidase in a gel
- b) if necessary, renaturation of the phosphoamidase
- c) incubating the gel or the blot membrane resulting from blotting the gel with ELF[®]39 phosphate and/or ELF[®]97 phosphate as substrate, and
- d) detecting the signal produced by the substrate

Claim 7. (Withdrawn) A method for the determination of the specificity of an inhibitor or activator for a certain phosphoamidase or phosphatase comprising the steps:

- a) separating a sample comprising several phosphoamidases and/or phosphatases in a gel
- b) optionally renaturing the phosphoamidase
- c) incubating the gel or the blot membrane resulting from blotting the gel with the inhibitor or activator and subsequently with ELF[®]39 phosphate and/or ELF[®]97 phosphate as substrate, and
- d) determining the specificity of the inhibitor or activator by comparing the signal produced in the gel or blot membrane incubated with the inhibitor or activator with the signal produced in a control gel or blot membrane not incubated with the inhibitor or activator.

Claim 8. (Cancelled)

Claim 9. (Cancelled)

Claim 10. (Cancelled)

Claim 11. (Previously Presented) A method of claim 1 wherein the substrate is DiFMUP (6,8-difluoro-4-methyl-belliferyl phosphate), FDP (fluorescein diphosphate), ELF[®]39 phosphate (2-(2'-phosphophenyl)-4-(3H)-quinazolinone) or ELF[®]97 phosphate (2-(5'-chloro-2'-phosphophenyl)-6-chloro-4-(3H)-quinazolinone).

Claim 12. (Previously Presented) A method of claim 5 wherein the substrate is DiFMUP (6,8-difluoro-4-methyl-belliferyl phosphate), FDP (fluorescein diphosphate), ELF[®]39 phosphate (2-

(2'-phosphophenyl)-4-(3H)-quinazolinone) or ELF[®]97 phosphate (2-(5'-chloro-2'-phosphophenyl)-6-chloro-4-(3H)-quinazolinone).

Claim 13. (Previously Presented) A method of claim 1 which is conducted in liquid phase, semi-solid phase, or solid phase.

Claim 14. (Previously Presented) A method of claim 5 which is conducted in liquid phase, semi-solid phase, or solid phase.

Claim 15. (Previously Presented) A method of claim 1 wherein said liquid phase is buffer-based, said semi-solid phase is gel-based, and said solid phase is blot-based.

Claim 16. (Previously Presented) A method of claim 5 wherein said liquid phase is buffer-based, said semi-solid phase is gel-based, and said solid phase is blot-based.

Claim 17. (Cancelled)

Claim 18. (Currently Amended) A method for the identification of an inhibitor or activator of a phosphoamidase protein histidine phosphoamidase 1 (PHP1) comprising:

- a) establishing a sample comprising said PHP1 and a test substance,
- b) administering a substrate selected from the group consisting of FDP, DDAO, DiFMUP, ELF[®]39 phosphate and ELF[®]97 phosphate to the sample,
- c) detecting the signal produced by the hydrolysis of the phospho-ester bond (P-O) of the substrate, and
- d) identifying the test substance as an activator or inhibitor of said PHP1 by comparing the signal produced in the sample comprising the test substance with the signal produced in a control sample comprising no test substance.